

Application No 10/656,696

Response dated: 3-8-2007

In Reply to Final Office action dated: November 8, 2006

**Amendments to the Drawings:**

The attached sheets of drawings include changes to FIGS. 4, 9 and 16. The changes reflect the addition of the label "Inverter Controller" to blocks 51, 81 and 101 in FIGS. 4, 9, and 16, respectively.

Attachment: Replacement Sheets

### **REMARKS**

The above amendments are made in response to the Final Office action of November 8, 2006. The Examiner's reconsideration is respectfully requested in view of the following remarks.

Claims 1-24 are pending in the present Application. Claims 6-12 and 18-24 have been previously withdrawn, leaving Claims 1-5 and 13-17 for further consideration. Applicants cordially thank the Examiner for the indication of allowable subject matter with respect to claims 3-5 and 13-17.

Reconsideration and allowance of the claims are respectfully requested in view of the following remarks.

#### **Amendments to the Drawings**

Applicants have amended the drawings to more clearly illustrate the features of the invention. Applicants have included replacement drawing as described above.

The Applicants have included new drawings, namely FIGS. 4, 9 and 16. The new drawings include the label "Inverter Controller" in the block designated by reference numerals 51, 81 and 101 in FIGS. 4, 9 and 16, respectively.

No new matter has been introduced by the new drawings as support is found throughout the specification, the figures, and the claims as originally filed, specifically pages 11, 13 and 17.

Consideration and entry of the Replacement Drawing Sheets for FIGS. 4, 9 and 16 are respectfully requested.

#### **Allowable Subject Matter**

Claims 3-5 and 13-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants gratefully acknowledge the Examiner's indication of allowable subject matter, however Applicants respectfully submit that claim 1, on which claims 3-5 and 13-17 variously

depend, is allowable in view of the following remarks. As such, Applicants have not rewritten Claims 3-5 and 13-17 in independent form at this time. Allowance of Claims 3-5 and 13-17 is respectfully requested in light of the following remarks.

### **Rejections Under 35 U.S.C. § 103**

In order for an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all of the elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996). See MPEP 2143.

#### **Claim 1**

Claim 1 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Wei et al. (U.S. Patent Publication No. 2003/0137485 A1, hereinafter "Wei") in view of Funamoto et al. (U.S. Patent Publication No. 2003/0142118 A1, hereinafter "Funamoto"). Applicants respectfully traverse.

Wei discloses in FIG. 3 a circuit diagram of a light source adjusting circuit. The light source adjusting circuit has a photo sensor (34) connected to an amplification circuit (44) that is further connected to a light source modulator (42) that is capable of spontaneously adjusting a back-light source (38) depending on an ambient illumination.

As acknowledged by the Examiner on page 4 of the present Office action, Wei does not disclose an **inverter comprising: an inverter controller generating a carrier signal for pulse width modulation and a lamp driving signal having on-time and off-time by pulse width modulating a dimming signal based on the carrier signal and controlling the on-time of the lamp driving signal in response to at least one of a vertical synchronization signal and a vertical synchronization start signal** as claimed in independent claim 1.

The Examiner relies on Funamoto to disclose the above-mentioned limitation. Funamoto discloses a liquid crystal display apparatus including a motion detection circuit (2) for detecting the amount of motion of a display image based on the video signal and a PWM (pulse width modulation) modulation pulse generation circuit (4) for generating modulation pulses which differ in frequency according to the detection result from the motion detection circuit (2). (Figs. 1-3.) In FIG. 3 Funamoto specifically discloses a PMW modulation pulse generating circuit (4) that includes a 240Hz PWM pulse generator (16) for generating a 240 Hz PWM modulation pulse synchronizing with the vertical synchronizing signal; a 60 Hz PWM pulse generator (18) for generating a 60 Hz PWM modulation pulse synchronizing with the vertical synchronizing signal; and a selector (20) for switching between the output of (16) and (18) based on the result of the motion detection by the motion detection circuit (2) and outputting the selected pulse as the modulation pulse. Funamoto controls the on-time of the lamp by selecting one of the two modulation pulses (i.e., either 60 Hz or 240 Hz) in response to a motion detection signal from the motion detection circuit (2) and then sending the selected modulation pulse to the inverter 103. (See FIGS. 3 and 4 and paragraph 0148.)

Applicants respectfully submit that Funamoto does not cure the deficiencies with respect to Wei, namely Funamoto does not teach, suggest or disclose an **inverter comprising: an inverter controller generating a carrier signal for pulse width modulation and a lamp driving signal having on-time and off-time by pulse width modulating a dimming signal based on the carrier signal and controlling the on-time of the lamp driving signal in response to at least one of a vertical synchronization signal and a vertical synchronization start signal** of independent claim 1. The modulation pulses of Funamoto are actually lamp driving signals for controlling the inverter 103, not a carrier signal for pulse with modulation. As shown in FIG. 4 of Funamoto the modulation pulses are square waves which would be unsuitable as a carrier signal for pulse width modulation as claimed. (See the last two waveform patterns of FIG. 4).

Thus, Applicants submit that neither Wei nor Funamoto, alone or in combination, render obvious the subject matter of independent claim 1.

Claim 2

Claim 2 stands rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Wei in view of Funamoto and further in view of Lee et al. (U.S. Patent Publication No. 2002/0057247 A1, hereinafter "Lee"). Applicants respectfully traverse.

Lee discloses an LCD device capable of performing a fast transition into a bend state at initial operation such as immediately after power is inputted in a liquid display device with an OCB mode. (See Abstract).

Lee fails to cure the deficiencies of Wei and Funamoto with respect to claim 1, namely, Lee does not disclose an **inverter comprising: an inverter controller generating a carrier signal for pulse width modulation and a lamp\_driving signal having on-time and off-time by pulse width modulating a dimming signal based on the carrier signal and controlling the on-time of the lamp driving signal in response to at least one of a vertical synchronization signal and a vertical synchronization start signal** of independent claim 1.

Thus, Applicants submit that neither Wei, nor Funamoto, nor Lee, alone or in combination, render obvious the subject matter of independent claim 1. Claim 2 depends from claim 1, and thus includes the allowable elements of claim 1. It is thus believed that the dependent claims are patentable over the cited references for at least the reasons give above for independent claim 1.

Accordingly, it is respectfully submitted that the claimed invention is allowable over the cited references. The Examiner's reconsideration and withdrawal of the rejection of claims 1 and 2 and their subsequent allowance is respectfully requested.

**Conclusion**

All of the objections and rejections are herein overcome. In view of the foregoing, it is respectfully submitted that the instant application is in condition for allowance. No new matter is added by way of the present Amendments and Remarks, as support is found throughout the original filed specification, claims and drawings. Prompt issuance of Notice of Allowance is respectfully requested.

The Examiner is invited to contact Applicants' attorney at the below listed phone number regarding this response or otherwise concerning the present application.

Applicants hereby petition for any necessary extension of time required under 37 C.F.R. 1.136(a) or 1.136(b) which may be required for entry and consideration of the present Reply.

If there are any charges due with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicants' attorneys.

Respectfully submitted,

By: /Amy Bizon-Copp/  
Amy Bizon-Copp  
Registration No. 53,993  
Cantor Colburn LLP  
55 Griffin Road South  
Bloomfield, CT 06002  
PTO Customer No. 23413  
Telephone: (860) 286-2929  
Fax: (860) 286-0115

Date: March 8, 2007